

Amendments to the Claims:

This listing of claims will replace all prior versions, and
5 listings, of claims in the Application:

Listing of Claims:

1 1. (currently amended): A flexible, hollow waveguide for
2 transmitting radiation in visible and IR regions, comprising:
3 (a) a hollow, flexible tube having a transparent annular
4 body defining a bore with a smooth inner bore surface;
5 (b) a reflective metal layer disposed upon the smooth
6 inner bore surface; and
7 (c) a composite of dielectric, sulfide-containing
8 materials having a high refractive index ratio, said
9 sulfide-containing materials disposed upon said
10 reflective metal layer and forming a photonic, bandgap
11 tube transmitting in the visible and IR regions.

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1 2. (original): The waveguide in accordance with claim 1,
2 wherein said hollow, flexible tube is composed of glass.

1 3. (original): The waveguide in accordance with claim 1,
2 wherein said hollow, flexible glass tube is composed of
3 silica-glass.

1 4. (original): The waveguide in accordance with claim 1,

2 wherein said composite of dielectric, sulfide-containing
3 materials comprise disparate refractive indices of
4 approximately 2:1.

1 5. (original): The waveguide in accordance with claim 4,
2 wherein said metallic layer is selected from a group of metals
3 consisting of: Ag, Au, Cu, Pt, Ni, Mb, Al, and combinations
4 thereof.

1 6. (original): The waveguide in accordance with claim 1,
2 further comprising:
3 (d) an outer layer surrounding the hollow, flexible tube.

1 7. (original): The waveguide in accordance with claim 4,
2 wherein the composite of sulfide-containing materials
3 respectively comprise paired composite layers of cadmium and
4 lead sulfide.

1 8. (currently amended): The waveguide of claim ~~8~~ 4, wherein
2 said outer layer is composed of a material selected from a
3 group of materials consisting of plastic, and silicone.

1 9. (original): A flexible, hollow waveguide, comprising:
2 (a) a flexible, hollow tube having a transparent annular
3 body defining a bore with a smooth inner bore
4 surface;
5 (b) a metallic layer disposed upon the smooth inner bore
6 surface; and

7 (c) a composite of dielectric materials disposed upon the
8 metallic layer featuring disparate refractive indices
9 with a ratio of approximately 2:1.

1 10. (original): The waveguide in accordance with claim 9,
2 wherein said composite of dielectric materials respectively
3 comprise two sulfide layers.

1 11. (original): The waveguide in accordance with claim 9,
2 wherein said metallic layer is selected from a group of metals
3 consisting of: Ag, Au, Cu, Pt, Ni, Mb, Al, and combinations
4 thereof.

1 ~~10.~~ 12. (currently amended): The waveguide in accordance with
2 claim 9, further comprising:

3 (d) an outer layer surrounding the hollow flexible tube.

1 ~~12.~~ 13. (currently amended): The waveguide in accordance with
2 claim 9, wherein the composite of dielectric materials form
3 sulfide-containing layers.

1 ~~13.~~ 14. (currently amended): The waveguide in accordance with
2 claim 9, wherein the composite of dielectric materials
3 respectively comprise cadmium and lead sulfide.

1 ~~14.~~ 15. (currently amended): The waveguide in accordance with
2 claim 11, wherein said outer layer is selected from a group of
3 materials consisting of plastic, and silicone.

1 ~~15.~~ 16. (currently amended): A flexible, hollow
2 waveguide for transmitting radiation in visible and IR
3 regions, comprising:
4 (a) a hollow, flexible tube having a transparent annular
5 body defining a bore with a smooth inner bore
6 surface; and
7 (b) a composite of dielectric, paired sulfide-containing
8 materials having a high refractive index ratio, said
9 sulfide-containing materials disposed upon said
10 hollow tube, and forming a photonic, bandgap tube
11 transmitting in the visible and IR regions.

1 ~~16.~~ 17. (currently amended): The waveguide in accordance with
2 claim ~~15,~~ 16, wherein said hollow, flexible tube is composed
3 of glass.

1 ~~17.~~ 18. (currently amended): The waveguide in accordance with
2 claim ~~15,~~ 16, wherein said hollow, flexible glass tube is
3 composed of silica-glass.

1 ~~18.~~ 19, (currently amended): The waveguide in accordance with
2 claim ~~15,~~ 16, wherein said composite of dielectric, sulfide-
3 containing materials comprise disparate refractive indices of
4 approximately 2:1.

1 ~~19.~~ 20. (currently amended): The waveguide in accordance
2 with claim ~~18,~~ 19, further comprising:

3 (d) an outer layer surrounding the hollow, flexible tube.

1 ~~20.~~ 21. (currently amended): The waveguide in accordance with
2 claim ~~15,~~ 16, wherein the composite of sulfide-containing
3 materials respectively comprise paired composite layers of
4 cadmium and lead sulfide.

1 ~~21.~~ 22. (currently amended): The waveguide of claim ~~19,~~ 20,
2 wherein said outer layer is composed of a material selected
3 from a group of materials consisting of plastic, and silicone.

1 ~~22.~~ 23. (currently amended): A flexible, hollow waveguide,
2 comprising:

3 (a) a flexible, hollow tube having a transparent
4 annular body defining a bore with a smooth inner
5 bore surface;

6 (b) a composite of dielectric materials disposed upon
7 the smooth inner bore surface of said transparent
8 annular body, featuring disparate refractive
9 indices with a ratio of approximately 2:1.

1 ~~23.~~ 24. (currently amended): The waveguide in accordance with
2 claim ~~22,~~ 23, wherein said composite of dielectric materials
3 respectively comprise two sulfide layers.

1 ~~24.~~ 25. (currently amended): The waveguide in accordance with
2 claim ~~22,~~ 23, further comprising:

3 (d) an outer layer surrounding the hollow flexible tube.

1 ~~25.~~ 26. (currently amended): The waveguide in accordance with
2 claim ~~22,~~ 23, wherein the composite of dielectric materials
3 respectively comprise cadmium and lead sulfide.

1 ~~26.~~ 27. (currently amended): The waveguide in accordance with
2 claim ~~24,~~ 25, wherein said outer layer is selected from a
3 group of materials consisting of plastic, and silicone.

1 ~~27.~~ 28. (currently amended): A method of fabricating a
2 flexible, hollow waveguide using liquid phase deposition,
3 comprising the steps of:

4 (a) Depositing a metallic layer on a smooth, inner bore
5 surface of a hollow, flexible, silica-glass tube;
6 and

7 (b) depositing at least one layer containing a sulfide
8 upon said metallic layer of step (a).

1 ~~28.~~ 29. (currently amended): The method in accordance with
2 claim ~~27,~~ 28, wherein two sulfide-containing layers, cadmium
3 sulfide and lead sulfide, respectively, are deposited upon
4 said metallic layer.

1 ~~29.~~ 30. (currently amended): The method in accordance with
2 claim ~~27,~~ 28, wherein a cadmium sulfide layer is deposited
3 upon said metallic layer in accordance with step (b).

1 ~~30~~ 31. (currently amended): A method of fabricating a
2 flexible, hollow waveguide using liquid phase deposition,
3 comprising the steps of:
4 (a) depositing at first layer of cadmium sulfide upon an
5 inner, smooth bore surface of a hollow silica-glass
6 tube; and
7 (b) depositing at least a second layer of lead sulfide
8 over said first layer of cadmium sulfide.

1 ~~31~~ 32. (currently amended): The method in accordance with
2 claim ~~30~~ 31, wherein multiple sulfide-containing layers of
3 cadmium sulfide and lead sulfide, respectively, are stack
4 deposited upon said inner, smooth bore of said hollow tube.